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THE MERINO SHEEP

OF THE

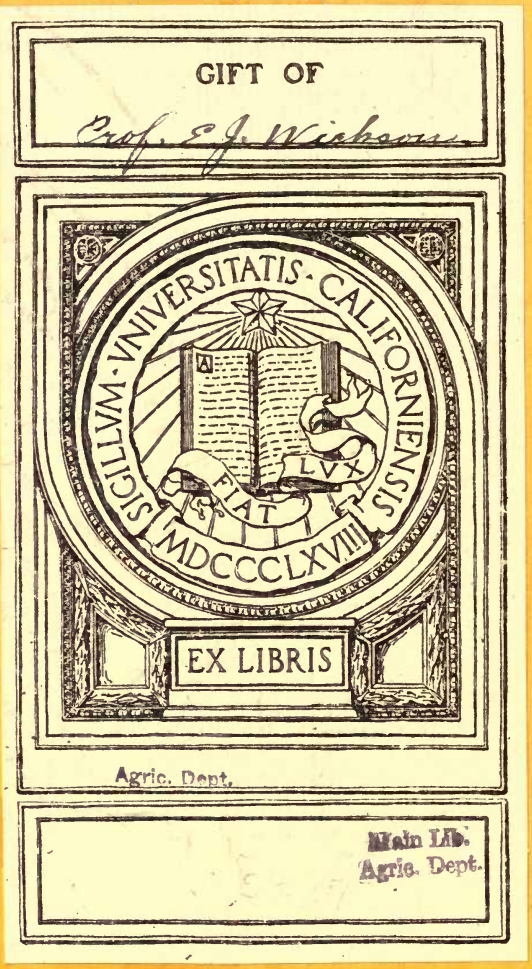
NATIONAL SHEEP STUD FARM

OF

RAMBOUILLET.

YB 16174

Edward J. Wickson.



To Professor Wickson, with
the best author's Compliments
San Francisco 2 June 1894
W. de Fonvielle

Edward J. Wickson.

THE MERINO SHEEP

OF THE

NATIONAL SHEEP STUD FARM

OF

RAMBOUILLET.

GENERAL CONSIDERATIONS OF BREEDING.

REPORT ON THE SHEEP SHOW,

ADDRESSED TO

M. LE CAPITAINE DE VAISSEAU MATHIEU,

GENERAL COMMISSIONER FOR FRANCE

TO THE

SYDNEY INTERNATIONAL EXHIBITION, 1879.

BY

F. DE SAVIGNON,

Professor of Agriculture at the National Agricultural Institute of France,

Commissioner for the French Government,

Delegate for the Ministry of Agriculture and Commerce to the Sydney International Exhibition,

Representative of the National Sheep Stud Farm of Rambouillet.

TURNER AND HENDERSON, Hunter Street, Sydney.

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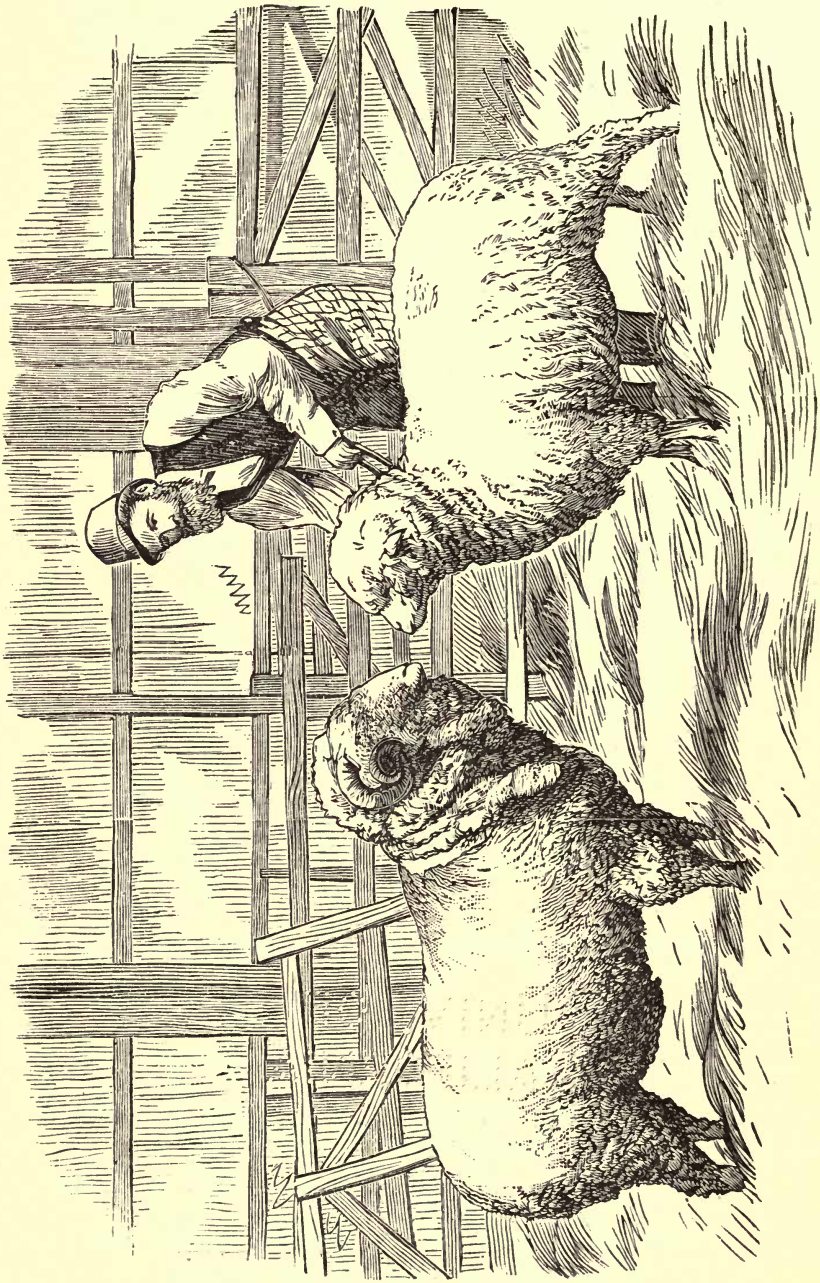

THE MERINO SHEEP

OF THE

NATIONAL SHEEP STUD FARM

OF

RAMBOUILLET.

(Rambouillet, Seine-et-Oise, France.)

SEVERAL people having expressed a wish to have some particulars regarding the sheep landed from France on the 4th of August last, and sent here specially for the Sydney International Exhibition, we shall endeavour to comply.

These sheep are generally known as French Merino or Rambouillet. The French man-of-war Rhin landed eighteen; three rams and nine ewes are the property of the French Government, and are exhibited by the National Stud Farm of Rambouillet; two rams and four ewes belong to Mr. Gilbert, the most renowned sheep breeder in France. They come from the stud flock he has on his farm at Wideville.

We do not pretend to explain to the sheep breeders of New South Wales the benefit they can derive from sheep breeding. They have long ere this shown to the world that they have fully appreciated the real worth of the animal we are now dealing with. In the first times of the sheep farming in Australia, the breeders of New South Wales have insured success by a complete and thorough adherence to this principle, viz., that, in order to perpetuate in the breed the characteristics of the sires, it is necessary to be certain that they possess the requisite qualities, but above all that such qualities are the natural inheritance of the sires, and also that the animals must be properly tended in order to develop such characteristics, if they exist in the sheep. Such characteristics and qualities, resulting from the purity and antiquity of the race, are found most perfect in the Rambouillet Merinos. Let us glance briefly at the Rambouillet stud farm, and the animals reared on it. The Rambouillet Park was purchased by Louis XVI., from the Duke of Penthievre, in 1773. Two years later His Majesty caused it to be constituted into an experimental farm, more specially devoted to the acclimatisation of useful plants and animals.

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For years the question of wool (which has always been a most serious matter) was one of great moment with the statesman who had to deal with the agricultural trade and the industries of France. The kingdom produced then very little fine wool. The province of Roussillon only furnished a small quantity, due, no doubt, to an early importation of Spanish sheep. Spain alone supplied the wants of France, and with a view of becoming independent from foreign importations, Louis XVI., acting on the advice of Daubenton and Tessier, both scientific men of great experience, obtained from the King of Spain leave to introduce into France a flock of Merino sheep of the purest blood and finest wool. This flock, consisting of 42 rams, 334 ewes, and seven leading sheep, left Segovia on the 15th of June, 1786. The King of Spain's orders were that the sheep sent be of the choicest kind, and producing the very finest wool. They were selected in the province of Leon, and descended from the following races :—Perales, Parella, Paulor, Negretti, Ercurial, Alcolo, San Juan, Potago, Iranda, Salazar. The breeders from whose farms the sheep sent to France were selected made it a point of honour to select the most remarkable animals in their possession. Out of the lot, 318 ewes, 41 rams, and the seven leaders reached Rambouillet on the 12th of October, 1786. From that date the Rambouillet stud farm has never ceased to hold the highest rank for sheep. The various directors of the farm, who, in succession, have had its management, have always had the same object in view, and adhered to the same principle—selection and maintaining with strict care the prevention of any mixture of foreign blood in the stud flocks. For this object the Park of Rambouillet was from the outset surrounded by high stone walls, in order to prevent any contact with surrounding flocks. The first lambing took place in 1787. From March, 1787, to September, 1790, 192 ewes were gifted by order of the King, 30 were sold, reducing by 220 ewes the stud flock. Nevertheless, the number of births was kept up at a mean of 188 for 13 years, from 1788 to 1800 inclusive.

This first attempt to acclimatise the Merino in France was so satisfactory, that when the treaty of Bale was signed, one of the stipulations put upon Spain was that from 5000 to 10,000 sheep should be imported into France. This enabled the formation of several other stud farms in the kingdom. Thus, in 1799, Mr. Gilbert, professor and acting director of the School of Alfort, was sent to Spain to select Merino sheep. In July, 1801, 40 ewes and 6 rams were added to the Rambouillet stud. From that date no sheep have ever been introduced into it.

The Spanish Merino is, therefore, the only breed existing at Rambouillet. It has been improved and propagated there, and has become known as the French Merino or

Rambouillet sheep. The appended tables, drawn from notes furnished by Monsieur Bernardin, the present manager, can be taken as strictly true and correct (notes given by the director himself), and show the gradual improvements of the fleeces from 1794 to 1877:—

Table I.

Table of Observations made at Rambouillet on the Sheep of the Merino Race Imported in France in 1786.

Year.	No. of Sheep.	Sex of the Animals.	Weight after Shearing. cwt. qs. lb. oz.	Average Yield. lb. oz.	General Average. lb. oz.	P. cent. of wgt. of carcase after shearing.
1794	99	Rams, all ages	...	7 8	7 4 5-6	
	35	Ewes	...	7 1⅜		
1800	26	Rams	...	9 6	8 9 5-6	
	239	Ewes	...	7 13⅜		
1804	45	Rams	...	8 2¼	7 15⅛	
	240	Ewes	...	7 12		
1813	13	Rams	...	9 7⅜	8 10 13-16	
	93	Ewes	...	7 13⅛		
1817	13	Rams, all ages	...	...	9 7 1-16	
	93	Ewes	...	...		
1838	49	Rams	...	11 4	9 8 1-21	
	286	wes	...	7 12 1-14		
1847	12	Rams	1 3 13 10⅛	12 2⅜	10 6 5-12	5.80
	277	Ewes	1 0 13 11 1-14	8 10½		6.88
1851	4	Rams, 18 months	1 2 8 12⅛	12 3¾	10 0 5-12	6.92
	322	Ewes, all ages	1 0 2 8	7 13 1-12		6.61
1869	67	Rams	1 1 13 2 1-5	14 10½	12 7 7-24	9
	385	Ewes	0 3 22 14¼	10 4 1-12		9.40
1877	79	Rams	1 1 16 9⅜	16 12⅛	14 0⅛	10.70
	521	Ewes	0 3 13 10⅛	11 3¾		11.30

The following facts arise from the first part of the above:—1. That the fleeces of rams of any size, which in 1794 only gave an average of 7 lb. 8 oz., reached in 1838 11 lb. 4 oz., which gives an increase of 3 lb. 12 oz. in 45 years, or 1⅓ oz. annually. 2. That the fleecing ewes, any age, which were yielding in 1794 7 lb. 1¾ oz., reached in 1838 7 lb. 12 1-14 oz.

giving an increase of 2 5-9 oz. annually. 3. That the general average, which in 1794 was 7 lb. 4 5-6 oz., increased 2 lb. 3 oz. in 34 years, and reached in 1838 9 lb. 8 1-21 oz., being a yearly increase of 1 oz.

The second part of the table shows that the average quantity of wool yielded by the rams was, in 1847, 12 lb. 2⅔ oz., being 5.80 per cent. of the weight of the animal after shearing; and in 1877, 15 lb. 12½ oz., or 10.70 per cent. The improvement in the breed is clearly demonstrated in comparing these figures; the improvement of the Merino, as a wool-producing sheep, is followed by that of the increase of 4 lb. 10 oz. in forty years in the weight of the animal, being equal to 1 6-7 oz. per annum.

In the ewes in 1847, we note 8 lb. 10½ oz., equal to 6.88 per cent. of the weight of the animal after shearing; and in 1877, 11 lb. 3¾ oz., or 11.30 per cent., making a difference of 2 lb. 9¼ oz., or 1 oz. a year.

These figures need no comment. They result from an average taken on a large number of sheep. Thus those of 11 lb. 3¾ oz. average weight of the fleece of the ewes in 1877, and the yield in wool of 11.30 per cent. of the weight of the ewes after the shearing, result from the average taken on 521 ewes of all ages. And this system of following the increase or decrease of the yield of the sheep on their farms is practised throughout France.

Having stated the improvements obtained on the yield of the fleeces at Rambouillet in weight, we shall see how it bears on the fibre of the wool. The table on the following page is handed to us by M. Bernardin himself.

Several noteworthy facts are shown in this table. 1. That the rams' wool is longer, less fine, and more wavy than that of the ewes. 2. That the diameter of the fibre has varied but very little. 3. That the lock has lengthened slightly; but this extra length does not suffice to explain the increase of weight in the whole fleece. This result acquired must be attributed to a multitude of causes, amongst others the increase in the number of fibres on a given surface of skin. 4. That the number of undulations has been increased. On the other hand the shape of the locks has been improved. It is more square, and the fleece is closer. The wool of the Rambouillet sheep is, on account of its firmness, and of its other qualities, eagerly bought by the manufacturers for clothing purposes. The yield of this wool, after scouring, is the same now as it was at the time of the introduction of the Merinos in France—varying from 30 to 33 per cent.; this again tends to show that the race has maintained its purity, although in other ways it has been materially improved. We need not speak of the hardy nature of the Rambouillet Merinos; this fact is well known in a colony where sheep are neither housed nor watched, but even in this we have

Mons. Tessier's opinion. Speaking of a flock placed on an island in the Rambouillet Park, he says :—"They thrive there without any care, even at lambing time, and bred in liberty, become so wild that great care has to be taken to secure men for shearing ; yet all losses in that flock have been accidentel."

This characteristic has no doubt caused them to be so favourably received in Australia, the Cape, La Plata, Austria, and Russia.

Table II.

Length, Undulations, and Diameter of the Wool.

Periods.	Rams.			Ewes.			Average.		
	Length of the lock, one year's growth.	Undulations per inch.	Diameter of the fibre.	Length of the lock, one year's growth.	Undulations per inch.	Diameter of the fibre.	Length of the lock, one year's growth.	Undulations per inch.	Diameter of the fibre.
	Inches.		Inch.	Inches.		Inch.	Inches.		Inch.
1787—1796	2.2008	38.86	0.0008504	2.0748	40.51	0.0008110	2.1378	39.68	0.0008307
1797—1806	2.3425	43.56	0.0008425	2.2205	44.57	0.0007362	2.2815	44.06	0.0007894
1807—1816	2.2894	41.53	0.0008031	2.1653	45.33	0.0007086	2.2274	43.43	0.0007559
1817—1826	2,2224	42.41	0.0007795	2.3071	44.57	0.0007323	2.2648	43.49	0.0007559
1827—1836	2.1299	41.40	0.0007992	2.1870	45.08	0.0007204	2.1585	43.24	0.0007598
1837—1846	2.1811	41.19	0.0008031	2.0551	49.27	0.0007401	2.1181	45.23	0.0007716
1847—1856	2.3642	42.03	0.0008228	2.2047	45.84	0.0007992	2.2845	43.93	0.0008110
1857—1866	2.2933	41.65	0.0008661	2.2008	45.72	0.0008228	2.2471	43.68	0.0008445
1867—1877	2.5075	39.95	0.0008897	2.3370	46.50	0.0007992	2.4223	43.22	0.0008445
Totals	20.5311	372.58	0.0074564	19.7523	407.39	0.0068698	20.1420	389.96	0.0071633
General Average	2.2812	41.39	0.0008285	2.1947	45.26	0.0007633	2.2380	43.33	0.0007959

Table III.

Successive Weight of Young Rams born in 1862-63-64-65-66 (from lambing until 2 years old.)

Year of Birth.	1862.	1863.	1864.	1865.	1866.	Average.
Average date of births	December 8	November 12	November 28	November 14	November 29	November 23
Weight of ewes after lambing ...	c. q. lb. oz. 1 0 24 6	c. q. lb. oz. 1 0 22 1½	c. q. lb. oz. 1 0 5 4¼	c. q. lb. oz. 1 0 20 10½	c. q. lb. oz. 1 0 13 2⅜	c. q. lb. oz. 1 0 19 2
Weight of lamb when born	0 0 9 9	0 0 9 1	0 0 9 0⅜	0 0 9 15	0 0 9 121-6	0 0 9 14¾
Comparative weight of lamb to that of ewe per cent....	7.	6.75	7.10	7.49	9·56	7·58
Weight of lamb on the 1st of January	0 0 20 2	0 1 5 0	0 0 27 3⅜	0 1 3 4	0 0 27 7	0 0 27 13
Ditto ditto ditto 1st of May	0 2 22 15	0 3 9 8¾	0 3 2 6	0 3 6 10	0 2 15 2	0 3 0 2
Wool at six months	0 0 2 10⅜	0 0 2 126-7	0 0 3 01-6	0 0 2 14⅜	0 0 2 8⅜	0 0 4 13¼
Weight of lamb on the 1st of June ...	0 3 6 3⅛	0 3 20 15	0 3 11 7⅜	0 3 16 2⅛	0 2 23 12	0 3 10 1⅜
Ditto ditto ditto 1st of December ...	1 1 8 10⅜	1 1 14 2⅜	1 1 14 4⅜	1 1 4 7⅛	1 0 13 2⅜	1 1 5 5⅜
Ditto weaner 1st of January ...	1 1 16 9¼	1 1 15 12⅛	1 1 25 12⅛	1 1 12 10	1 0 20 8¼	1 1 14 11⅛
Ditto ditto 1st of May	1 2 10 3¼	1 2 24 11⅛	1 2 23 1	1 2 7 11¼	1 1 11 2¾	1 2 9 12
Wool from 12 to 18 months	0 0 10 11½	0 0 11 15	0 0 13 11¼	0 0 11 7	0 0 12 6⅜	0 0 12 0⅜
Weight of weaner on the 1st of June	1 2 9 8⅜	1 2 18 8⅜	1 2 10 8⅛	1 1 26 8⅛	1 1 12 3	1 2 4 3½
Ditto ditto ditto 1st of January ...	1 2 14 8	1 3 8 8⅛	1 3 10 12¼	1 2 17 4¼	1 0 26 6½*	1 2 26 11⅜

* The rams weighed already the same (1cwt. 26lb. 6½oz.) on the 1st of October preceding; 25 months therefore suffices for their full growth.

TABLE IV.

SUCCESSIVE WEIGHT OF EWE-LAMBS BORN IN 1862-63-64-65-66 (FROM BIRTH UNTIL THE AGE OF).

Year of Birth.	1862.	1863.	1864.	1865.	1866.	Average.
Average dates of births	December 8	November 12	November 23	November 14	November 29	November 23
	c. q. lb. oz.	c. q. lb. oz.	c. q. lb. oz.	c. q. lb. oz.	c. q. lb. oz.	c. q. lb. oz.
Weight of ewes after lambing... ...	1 0 26 12½	1 0 13 7	1 0 23 11¾	1 0 20 15	1 0 15 3	1 0 20 0
Weight of lamb at birth	0 0 9 0¾	0 0 8 11½	0 0 9 3	0 0 10 0⅜	0 0 10 4⅓	0 0 9 7¼
Comparative weight of lamb to that of ewe per cent.	6·52	6·95	6·76	7·55	8·08	7.17
Weight of lamb on the 1st of January	0 0 19 15	0 1 0 5	0 0 24 1⅓	0 1 2 8¼	0 0 23 9	0 0 25 4½
Ditto ditto ditto 1st of May	0 2 13 7⅜	0 2 14 02-5	0 2 12 12½	0 2 12 9	0 2 5 6¼	0 2 11 9¾
Wool at six months	0 0 2 0⅜	0 0 2 0¾	0 0 2 7½	0 0 2 14⅛	0 0 2 2	0 0 2 5⅓
Weight of lamb on the 1st of June ...	0 2 18 1⅛	0 2 19 5⅜	0 2 18 1⅛	0 2 24 15½	0 2 10 11½	0 2 18 3½
Ditto ditto ditto 1st of December ...	1 0 1 4½	0 3 22 3⅜	0 3 24 5½	0 3 26 1½	0 3 13 3⅜	0 3 23 0⅜
Ditto weaner 1st of January	1 0 7 9½	1 0 0 13½	0 3 27 14¾	1 0 2 11	0 3 19 13½	1 0 0 9⅛
Ditto ditto ditto 1st of May	1 0 19 8½	1 0 12 6½	1 0 9 6⅓	1 0 25 4⅜	0 3 27 14⅜	1 0 13 5
Wool from 12 to 18 months	0 0 8 6½	0 0 10 2	0 0 9 12½	0 0 10 3⅞	0 0 10 6	0 0 9 12½
Weight of weaner on the 1st of June	1 0 8 45-6	1 0 5 10½	1 0 12 3⅙	1 0 7 10½	0 3 20 8⅜	1 0 5 4⅓
Ditto ditto ditto 1st of January ...	1 0 18 6⅓	1 0 14 5¼	1 0 13 2⅜	1 0 11 2⅓	1 0 4 14⅜	1 0 12 61-6
Ditto ditto ditto 1st of May	1 0 26 2	1 0 22 10¾	1 0 23 14⅜	1 0 16 3½	1 0 5 7⅛	1 0 18 14
Wool from 18 months to 2½ years ...	0 0 8 13¾	0 0 9 15⅜	0 0 9 9¼	0 0 10 11¼	0 0 10 15	0 0 10 0½

The vigorous and healthy nature of the Rambouillet sheep are well known; he is a good feeder, and will thrive where other sheep would suffer. In September, 1870, the stud flock had to be travelled to Rennes (220 miles) in 18 days; and, although the ewes were with lamb of three months, they all reached in perfect safety, and received no other food on the road but what they could find, thus proving the hardiness of this race.

Longevity is also a noteworthy peculiarity of this breed. As a rule ewes eight years old have to be set aside, owing to the condition of their teeth preventing them feeding sufficiently to give good production. At Rambouillet ewes 10 years old drop first-rate lambs, and their fleece does not show any depreciation in value or weight. In 1875 six ewes, 10 years old, weighing 3qr. 20lb. each, gave at shearing 12 11½oz. of wool, being 12.25 per cent. of their weight.

Let us now examine the merino as a precocious animal. The tables No. 3 and No. 4 will give it to us correctly. The weights have been taken accurately every year on lots consisting of 10 animals of both sexes.

If we deduct the weight of the last shearing from that of the sheep, we shall find that the ewes 29 months old are very nearly as heavy as when 25 months, whence we may conclude that the full growth was ended at that period, as in the case of the rams. In the previous notes I have tried to show the purity of the Rambouillet sheep, and the advantages that they present.

I could have said more on this subject, but I might encroach too much on the space which is allotted to me. My intention is merely to give a summary of the nature of sheep brought over for the Exhibition. I shall merely, in conclusion, remind the reader that all animals sent by the National Establishment of Rambouillet have the indelible brand of that farm—the ewes on the ear, the rams on the horns. All have certificates bearing official record of their age and pedigree.

F. de SAVIGNON,

Professor of Agriculture at the National Institute of Agriculture of France,

Commissioner for the French Government,

Delegate for the Ministry of Agriculture and Commerce to the Sydney International Exhibition,

Representative of the National Sheep Stud Farm of Rambouillet.

GENERAL CONSIDERATIONS OF BREEDING

AND

REPORT ON THE SHEEP SHOW,

ADDRESSED TO

MR. LE CAPITAINE DE VAISSEAU MATHIEU,

General Commissioner for France to the Sydney Internationa Exhibition, 1879.

Sydney, 10th December, 1879.

SIR,—

You have done me the honour to request me to report on the Sheep Show which has just taken place; and to prove that I duly appreciate this mark of your esteem, I think I cannot do better than place before you all the observations I have made on the animals exhibited, together with the various reflections which have suggested themselves to my mind.

New South Wales—a country specially adapted for breeding purposes—owes its riches, in great measure, to its cattle and sheep, which form the elements of a very active trade with Europe. But the benefits which that fruitful branch of Agriculture—Stock-breeding—bestows upon the inhabitants of this country are not spontaneous results; they are the justly deserved rewards granted by Nature to the persevering efforts of a people whose energy daily enlarges the boundary line of reclamation—substituting civilization for barbarism, and converting barrenness into fruitful plenty.

These results could only have been obtained by a people of progress—a class which has never been wanting in this country; but it may be well to remark that, although a spirit of enterprise and perseverence is a condition of success for those who embark in Agricultural pursuits, there must also be certain special knowledge, which may be acquired in two ways, viz.: By study put into actual practice, and thereby confirmed; or by practice alone, that is to say, by custom. In the latter case the knowledge is incomplete, as it has only one basis in place of two. In both the foregoing classes many breeders are to be found in New South Wales; keen observers, knowing admirably well how to prepare their animals for competition, and thorough masters of their business.

Before touching on my special subject—the Cattle Show, of which I shall speak later on—permit me to place before you a few remarks on the fundamental principles of Zootechny relative to the breeding and perfecting of animals in general, more particularly of sheep. These principles have ever been my guide when treating animals, and it is upon them that my opinions are partly based. I have no pretension of putting before you anything which is not already known to Australian cattle-breeders. I wish only to record here certain well-known rules which have been proved by practice to be correct, and I shall endeavour to do so as briefly as possible. Science has not yet been able to elucidate all the mysteries surrounding creation, and to go fully into the question it would be necessary to pen volumes, which would probably be of little use in resolving problems of great importance to humanity and interesting to the breeder from a lower point of view.

There are different methods of increasing and improving stock, of which the three following are the chief:—

1. **Selection.**—This plan consists in selecting, from one and the same race, animals of both sexes possessing in the highest degree the distinctive characteristics of that race, as well as the qualities and fitness which are sought to be perpetuated and improved; these animals are brought together, and the productions of these alliances are kept for future breeding purposes alone.

   The method of multiplying by coupling animals of the same family is also known as the system of "Consanguinity" (1., 2.—"Breeding in and in.")

2. **Crossing.**—When the breeder wishes to carry out this method he couples animals of the breed he desires to improve with others of a different descent possessing the sought-for qualities. Recourse is usually had to the male as the improving medium, on account of the large number of females he can render procreant.

3. **Acclimation.**—It is the importation of a stock of male and female animals new to the country.

Let us notice what are the effects resulting from the use of these different modes of production.

SELECTION.

Improvement by selection is based on the principle that certain beauties and peculiar fitness exist in a breed (even when gifted with great powers) which, by judicious crossing, can be perpetuated in the offspring of animals which have been in-and-in bred. The causes which give rise to these variations are numerous, and in many cases we are in ignorance of their action; amongst others are climate, soil, nourishment, the exercise of all and of certain portions of the body, special organs, &c.

It is desirable, as much as possible, to select breeders from such animals as are exempt from the defects sought to be eradicated, and possessed of diametrically opposite qualities—not to seek to correct one fault by another.

The older the improvements obtained by selection, *i.e.*, the larger the number of generations in which they have been shown, the more do they become distinctive signs of the breed, and the more assuredly also are they transmitted by reproduction.

Breeds brought to perfection by selection maintain the purity of their characters so long as the hygienic conditions which produced their improvement are maintained ; if deprived of these conditions, it may become needful to refresh the blood by a reproduction from the origin of the race, provided, of course, that the source still possess the qualities found to have deteriorated by changed hygienic circumstances.

Hygiene (Preservation of Health) should always be directed to aid the perfection sought to be obtained, as without it success is more than doubtful.

Inheritance—that character by which strains are transmitted—may be used to follow up and disseminate an improvement ; it may prove a help to the breeder, or it may occur that he will have to combat it—this last is always a work of great difficulty.

The age of the reproductive animals used has a marked effect on the offspring, which is easily understood on taking into account that, in young animals, the whole organization is in course of structure, whilst in the old it is decaying; and that in neither case do the animals possess that hereditary power which marks them at the adult age. It may be desirable to make use of either young or old animals, according to circumstances ; for instance, an old ram and an old ewe will modify in their progeny the character of their own fleeces at their adult age, and it often happens that an old ram gives wool finer than that of animals of which he was himself the father in the prime of life.

The state of health of the animals has also great influence on their progeny—an indisputable fact, which does not always receive sufficient consideration in breeding. It is also well to bear in mind that it is not from the absence of diseases alone that a perfect state of health results. The constitutions of animals of the purest race imaginable, carried into a centre other than that in which it was originally formed, undergo very great modifications at first; and during this period of transformation (often invisible) it is impossible to say absolutely that the animals are in good health. In order to explain myself more clearly, I will suppose a struggle to be going on between the determined character of the race in question and the causes of change which exist in the place

to which it has been transported. The animals, without being absolutely ill (far from it), do not possess, pending this contest, all the strength of heritage belonging to their race.

If the breeder has not been careful to select reproductions of an old race, endowed with great powers of resistance, acclimatised, and not only in good health, but full of vigour, he has proportionately diminished his chances of success.

If the animals are not of a very pure race, and supposing the breeder to have a plan fixed on in advance (such as the production of wool of a certain quality), the efforts which he may make to gain his end generally prove futile.

Selection fixes on the product, beauty, quality, fitness, and defects—in a word, the characteristics of the race from which these products come. In order, therefore, to use this method with success, a choice should be made with care, from the race on which it is proposed to operate, of breeding animals gifted in the highest degree with the beauties and qualities which it is desired to maintain and develop, and exempt as much as possible from the defects sought to be obliterated. It is absolutely necessary that the breeder should have beforehand a perfectly well-defined plan, and that he should adhere to it with that perseverance which is necessary to success. He should have well graven on his mind the exact model of the animal he wishes to produce, and should not lose sight of that image for a single instant; he may be perfectly convinced that the least negligence, the least error, will result in a "*statu quo*," even supposing a falling back is not the consequence.

Where there is only one quality to develop, and one defect to efface, the task is long and difficult; far more is this the case when seeking to bring out several qualities and to suppress a number of blemishes.

We think it is always more advantageous for a breeder to avail of the work of those who have preceded him in the career, and (rather than to follow up improvements in animals more or less common, of whose exact origin he is probably ignorant) to obtain animals of a pure and perfect race, increasing their number by raising stock, and adopting the general principles which I have recalled in the foregoing lines.

Consanguinity (in-and-in-breeding) is nothing less than Selection pushed to an extreme, and practiced in the family instead of in the entire race. It is, therefore, the family itself which furnishes all animals devoted to the purposes of reproduction; in this way the father and the daughter, the mother and her son, the brother and his sister, are allied together. It can easily be understood that if Selection fixes the characteristics of a race, Consanguinity must, *a fortiori*,

have the same result, and in a much more marked manner. Practice proves this to be the case, and it is precisely that which makes Consanguinity such a powerful agent in attaining perfection, of which, however, not all breeders are capable of availing themselves in such a manner as to materially improve stock.

Consanguinity fixes and develops the beauties, qualities, defects, and vices, but all are not equally apparent. Some may be hidden; some may exist in the shape of an individual or family predisposition, not extending to the whole race; Consanguinity, then, develops and makes them manifest. To have any chance of obtaining good results from this mode of reproduction, it would be necessary to make use of it only between animals of the same family, possessed of refined qualities, and completely exempt from all defects and all bad predispositions.

The effects of Consanguinity are very varied, but we have only to regard them in their bearing upon the breeding of wool-producing animals. If this mode of improvement has occasionally shown admirable results, it has also frequently been the cause of degeneration, which has shown itself in various ways—be it by a decrease in the height and weight of the animals, weakness of the backbone—the loins becoming hollowed, or the dimensions of the chest showing a decrease in breadth. It may happen that the quality of the wool changes also; if its dominant feature was fineness, its fineness may increase, but it is often at the expense of the thickness of the fleece, the abundance of the wool, its strength, elasticity, and firmness.

1. The elasticity of wool must not be confounded with the length of staple. During the cattle show, I, on several occasions, remarked breeders, who, in order to prove that their wool was excessively elastic, would take a lock, and stretch it in such a way as to entirely do away with the curl; they would then pretend that their wool was exceptionally elastic. Now in this way one can judge of the length of the wool only; if stretched so strongly as to break the wool, it gains more or less in length; if the tension is diminished, the wool recovers more or less of its original length. It is this quality (more or less developed) which is possessed by wool of stretching and recovering its pristine length which constitutes its elasticity. Clothes made from fabrics composed of wool of little elastic property get rapidly out of shape, particularly at the knees and elbows. The maximum of elasticity would be attained by that wool which, on being stretched as far as its strength would bear tension, and suddenly released, would instantly return to its original length.

It is easy to notice that wool produced by animals reared by "Consanguinity" is but very slightly elastic.

The quality and nature of the grease may also suffer variations frequently disadvantageous to the wool-growers.

The appearance of Kemp on animals whose race appeared to have been long free from it, the curl, and the cottony nature of the wool, might in many cases be considered as changes in the production resulting from the employment of the "Consanguinity" method; to the same cause may also be attributed the production of wool known as "without character," which may be very fine, but, as it possesses no other qualities, it is not desirable to encourage its growth.

Although "Selection" at the worst offers no danger, the slow way in which it acts, and the necessity for great practice and skill in its use, are reasons for having recourse to crossing as a means of improvement both prompt and easy. Crossing certainly acts quickly, but is it accompanied by much safety? This question is open to discussion.

CROSSING.

By this method the breeder mixes two distinct races to form mongrels possessed of intermediary qualities, which he desires to work. The idea of crossing is frequently the formation of an intermediate breed between the two which have been allied together. It is easy to form the desire of creating a new race, but to attain this end is a very different thing. Crossing is done to various extents; it may even have for its object the absorption of a race of ordinary by one of finer animals at the end of a certain number of generations. Let us examine its various modes of application.

In the first case, when it is desirable to produce a certain species of unmixed breed, the breeder knows, either from having seen it, or from having made an inexpensive experiment, that the animals he will obtain will be those he requires. Suppose a case of wool-producing animals, and that the sheep and the ram brought together are both of equally pure races; the product ought certainly to be a medium between the two. This is what happens . . . . but only in appearance, and in the opinion of the superficial observer; for on a close examination of each mongrel, it will soon be found that they have not that homogenousness which at first would be thought to exist. Some are more like the father than the mother; others offer more analogy with the character of the mother than of the father—the remainder possess peculiarities intermediary between those of both parents.

It may be asked why should these differences exist; it is because the reproductors had not equal powers of inheritance. Were it otherwise, and supposing that at this first trial the breeder had obtained the results he desired, it must not be concluded that a new attempt, made under analogous conditions, or with the same elements, would be equally successful; for inheritance—the property of race and of family—

reigns in the physical constitution of each individual, and must, consequently, change with it. Therefore a first essay may succeed, which, renewed the following year under, apparently, exactly similar conditions, may give totally different results arising from imperceptible reasons far too various to enumerate. We will only cite one example; let us suppose the ram to have been more fatigued during the serving than the ewe during gestation and lactation, or given at an adult age to young sheep, the force with which he impressed his characteristics on his progeny had decreased the following year by the sole fact of his having aged one year, whilst the same cause acting upon the sheep have given them more constancy; in this case the produce will be inferior to the preceding ones.

Let us pass on to examine from a commercial point of view the first crossing mentioned. If the breeder considers it advisable to work on his crossed breed as it stands, he has only to proceed no further and not change his system; he has only to procure reproductors of the two races necessary for his speculation.

So far from its being easy it is often excessively difficult to obtain the animals required; thus, to simplify matters, it often happens that the breeder selects, from among the animals of his first cross breedings, those which bear the most analogy to each other, and whose characteristics appear to be almost intermediary between those of the father and mother, and allies them together with the view of forming a fresh mixed breed, in which he hopes to find all the qualities which induced him to make a cross. The greater part of the time, it is a search after constancy* (that most precious quality of race) amongst animals without breeding, and that, too, when it has been destroyed amongst these same animals by the very mixture to which they owe their existence. Then we have continual oscillations between the characteristics of the two races, and constancy will be all the more difficult to procure because the two brought together at the commencement presented less mutual analogy.

Crossing is not always confined to the first degree as we have just depicted it; perhaps the breeder may wish to pursue the three-quarter blood plan. His difficulties, whilst of the same nature, are, in this case, less, because constancy has been partly destroyed among the females, whereas the male presents himself in all his hereditary strength. Taking numbers ranging from a maximum of 100 to a minimum of 0 to represent the hereditary strength of the reproducers brought together at the first and second crossing, it will be seen that the mixed breeds of the former possess each $\frac{100}{2} = 50$,

* By constancy is meant the uniform transmission of the qualities which are sought to be attained by the breeder.—[NOTE BY TRANSLATOR.]

and of the latter, $^{100}\frac{by\ 50}{2} = 75$. If it is true that heritage is proportionate to the purity of the animal, after a certain number of years constancy might be found amongst those obtained by this method of attaining perfection ; but whatever efforts the breeder may make, he can never procure the absorption of the entire inferior by the improving blood ; even if the produce were to offer all the characteristics of pure blood, on a minute examination of a certain number traces of an ignoble mother would be discovered ; the breeder could never attain an undeviating result ; cases of throwing back would always occur ; this would happen more or less frequently, but happen they would most undoubtedly.

We have still to examine another method of raising flocks and herds. viz. :

Acclimatisation, which consists in importing male and female reproducers foreign to the country to which they are brought.

Soil, climate, quality of the air, atmospheric pressure, nature of nourishment, and all exterior and interior circumstances, unite to influence animals thus imported, and cause more or less grave modifications in their nature ; hence it is said that one race adapts itself more or less easily to a country.

If the new conditions in which the imported animals are placed were identically the same as those which have co-operated in the formation of their race there is no reason why this breed should undergo any modification whatever ; but this does not often happen. Changes take place sometimes for the better, sometimes for the worse ; so that in order to secure success by acclimatisation it must be accompanied by careful selection.

For Acclimatisation to be performed under favourable conditions, it should be made with the help of the best procurable reproducers of the race to be acclimatised, to insure which, the question of price should be regarded as a secondary consideration. Money devoted to the purchase of reproducers of standing is money judiciously expended ; it becomes almost immediately a source of profit to the clever breeder.

Acclimatisation exacts from him who may try it certain knowledge respecting the hygiene and nourishment which have served to form and to preserve the race which he seeks to acclimatise.

By a careful management of changes, the chances of success become more favourable ; there are cases in which it would be a great fault to attempt a direct and complete acclimatisation on imported animals ; as, for instance, if high-priced, and if the place from which they come and that to which they are transferred present very notable differences.

Thus, animals of the Durham breed, reared in stalls and fed chiefly on farinaceous substances, if set at liberty in the bush, left to themselves to seek their own nourishment, and forced to be content with whatever they could find, would probably give very poor results; they might, perhaps, die of misery; the same might occur with wool-producing animals of perfect breed and accustomed to great care; let loose in a run, they would very probably give but little satisfaction; it is necessary, we repeat, to carefully arrange transitions.

In both cases, the best plan for reaping advantages from imported animals is to create for them, as far as practicable, a state of existence in all points resembling that from which they have been taken—to make them the centre of a small herd which will gradually increase, and of which each member, as the development goes on, bends to the exigencies of the existence that has become his, identifying himself with surroundings, henceforward to be those of his race. A small, select flock thus formed becomes, in the hands of a good breeder, a valuable nucleus for improvements.

You have requested me, Mr. General Commissioner, to furnish you with my ideas on the Sheep Show; before submitting them to you, I thought it my duty to place before you a sketch of the fundamental principles of modern Zootechny.

I examined consecutively each one of the rams exhibited among the fine carded and coarse-carded merino wool (Class 647, Sub-classes 103, 4, 5; 109, 10, 11), in all, eighty animals. Before saying anything respecting them, I should inform you that I failed to clearly seize the ideas of the organizers of the Sheep Show; I do not quite understand the object they had in view; was it to have a gathering of a large number of reproducers, so as to allow exhibitors and breeders to judge and compare; whilst by their decisions the jury would point out to visitors the animals most worthy of attention; or was it in order to induce commercial transactions? The fact of the Show and of the subsequent sale would lead to the conclusion that such was the double object in view.

But what is sought for here among these wool-bearing animals? Is it the meat that is wanted? Is it the simultaneous production of the two articles?

If it is the meat, it appears to me that sufficient importance is not attached to the conformation of the animals; if it is the wool, the same observation applies.

What is the best conformation for animals destined for the abbatoir? I reply; that which increases to its maximum the quantity of meat of the best quality, at the same time that it reduces to its minimum the proportion of waste and meat of inferior quality which the animal furnishes at the slaughter-house.

The same arguments can be applied—they ought to be and are—to wool. A conformation suitable for the slanghter-house is equally so for the production of wool. Regularity of form and fitness for both the butcher and for wool-producing are not incompatible; they ought to exist simultaneously, and they are all the more desirable, inasmuch as they constitute in animals thus advantaged a union of qualities which, after having rendered them profitable as wool producers, leaves them in a position to command better prices at the slaughter-house.

If the growth of wool is the sole desideratum, a show of fleeces would have been sufficient.

As the impressions made upon my mind by the Show are what I have to place before you, permit me to say that I do not think sufficient importance is attached to purity and characteristics of breeds. Not less than in Australia and England, do we, in France, seek a well-authenticated pedigree for our reproducing animals; but we also, and in the first place, carefully examine the animal itself, aud should we discover signs of degeneracy or of crossing, the papers certifying to the purity of its origin lose much of their value in our eyes; this course is not always adopted in New South Wales.

The sub-division of Class 647 into sub-classes:—Merino: Fine Combing Wool; and Merino: Heavy Combing Wool—is purely illusory from the moment that animals bearing fleeces resembling each other in every respect can be exhibited indifferently in either one of these sub-classes.

Whatever may have been the object proposed by the organizers of the Sheep Show, and whatever may be its result, I proceeded in the following manner, in order to become fully acquainted with the exhibits: I examined each ram separately, directing my attention specially to the following points:—Form; purity of breed; thickness of fleece at shoulder; quality of wool on all parts of the body; weight of each prize animal; weight of the fleeces of those rams which had been sheared.

I have expressed by points the degree of purity of each animal; and, in order to avoid all personalities, I propose to treat my notes as my own private documents.

FORM.

By the side of a small number of animals of good conformation (though not so in all points), we find a larger number whose shapes leave much to be desired, and others are decidedly defective, judging them either in their entirety, or in detail. We will therefore arrange the whole under three classes:—

Good Animals	16
Medium „	23
Defective „	41
Total	80

It may be said of the above that, generally speaking, they showed the following faults:—Heavy heads, narrow chests, salient backs, flat sides, long flanks, and tails attached too low.

PURITY OF BREED.

Very few of the rams which were exhibited as Merino could pass as "pure." Amongst a very small number, the characteristic beauties of the Merino were preserved; and in cases of one or more of these points being found in one exhibit, the animal often presented several defects which detracted considerably from its value.

To give a few examples: on consulting my notes on each ram, I find the following, which I transcribe literally, leaving the numbers in blank:—

"No..... Amongst all the exhibits this is one whose "form is the best and most regular: He is well covered, and "possesses excellent qualities—but one of them has been "forced too far, so as to become a defect; this animal's nose "is too fine, and is without character, being rather that of a "sheep than of a ram."

Another ram from a like source is thus annotated:— "Passably good form: The chest, however, rather narrow, "the loins not well borne up, and the tail set on too low; "the fleece, regarded as a ram's, preferable to the preceding "one."

These results may have two causes: Either the Selection, for some reason, was not sufficiently strict, or the following has taken place:—Degeneracy of the first ram, caused by an excess of a series of improvements of race, carried on by means of consanguinity during several generations; this degeneracy showing itself by the change in the nature of the wool.

In the case of the second ram, the fleece is better—very good even; but the same degeneracy is differently shown in the form of certain parts of the body.

The one has preserved all the characteristics of perfect Merinos with the exception of the wool; the other, on the contrary, shows the wool of a good Merino, and at the same time the defects with which faulty Merinos are reproached are apparent.

A weakness, resulting from consanguinity, must have been produced in the first case in one manner, and in the second with different effects.

Amongst animals of another flock exhibited as pure Merino, we find all the characteristics of race, although not always in their full force; occasionally only as distinctive signs by which their origin can be traced. They resemble somewhat the slightly angular form of certain types of old Merinos—the flank too marked, the side too flat; but these are their only defects. The chest is good, they are well set on their legs, and the body is good. The fleeces of these animals are well furnished; they contain kemp (in common with all those we have examined), and they are full of spiral curls, also common to the generality of the exhibits; the grease is not uniform in all, being at times white, hard, and tallowy, whilst in other animals it is of a deep brown, and sometimes these two kinds of grease are to be found on the same ram. On examining the wool towards the posterior part of the body and on the tail, it presented a silky, wavy appearance, which would lead one to think that whilst they are descendents of rams of pure blood, the purity on the mother's side was not so great when the flock was first formed. It is even possible that they may be the issue of common sheep, whose blood has been absorbed by the pure Merino.

Few animals exist that leave nothing to be desired, and the observations I have made respecting some of those exhibited should be regarded only as intended to point out one of the weak points of Australian breeding.

Besides the rams of which we have just spoken, whose qualities we do not dispute, some others are to be found which may reasonably be considered as animals of a certain amount of merit.

Apart from the rams, a number of half-breds were to be seen; amongst them we remarked two animals, which we thus annotated:—

"Conformation, middling, passably regular, well knit "forms; fleece well furnished all over the body; good white "grease, neither tallowy nor oily; that of the Tasmanian "animals more oily; thickness of fleece at shoulder, 0.085."

Then we come to some rams in which we recognise no merit. If any pure Merino exist among them the characteristics of race are so changed that it would be impossible to recognise them; and these animals have become inferior to really good half-breds.

In order to show my idea of the purity of the exhibited rams, I have given points to each one on the basis of 20 as a maximum. The following is the result of my system:—

1	Ram	obtained	.....19.50.....	19.50
1	,,	,,	.....19.25.....	19.25
7	,,	,,	each.....19.	.....133.
1	,,	,,	.....18.75.....	18.75
2	,,	,,	each.....18.50.....	37.
1	,,	,,	.....18.25.....	18.25
3	,,	,,	each.....18.	54.
2	,,	,,	each.....17.	34.
1	,,	,,	.....15.50.....	15.50
5	,,	,,	each.....15.	75.
2	,,	,,	,, ...14.	28.
2	,,	,,	,, ...13.	26.
3	,,	,,	,, ...12.	36.
3	,,	,,	,, ...11.	33.
18	,,	,,	,, ...10.	.....180.
4	,,	,,	,, ... 9.	36.
12	,,	,,	,, ... 8.	96.
12	,,	,,	,, ... 5.	60.
Total.....	80		Total points.....	919.25

If we divide 919.25 (the total number of points) by 80 (the total number of rams exhibited) we have a quotient of 11.49, which represents the mean of purity.

THICKNESS OF FLEECE AT SHOULDER.

The thickness of the fleeces taken at the shoulder varies from 1.771 inch to 4.330 inches. It was found to be in

			Inches.		Inches.
2	Rams	of	1.771	=	3.543
4	,,	,,	1.968	,,	7.874
3	,,	,,	2.165	,,	6.496
6	,,	,,	2.362	,,	14.173
16	,,	,,	2.559	,,	40.944
5	,,	,,	2.755	,,	13.779
7	,,	,,	2.952	,,	20.669
12	,,	,,	3.149	,,	37.795
14	,,	,,	3.346	,,	46.850
2	,,	,,	3.543	,,	7.086
2	,,	,,	3.740	,,	7.480
3	,,	,,	3.937	,,	11.811
3	,,	,,	4.133	,,	12.401
1	,,	,,	4.330	,,	4.330
80	Rams in all				235.231 total length.

On dividing 235.231 inches (the total thickness of the fleeces) by 80 (the number of rams), we have 2.940 inches as the average thickness for each.

We would observe that the averages of purity of race and of thickness of fleeces are far from having, in our eyes, the value of the numbers of which they are the result.

On again consulting the notes taken respecting each ram, we see that the fleeces are the thicker on the animals that have inherited the greater number of points on account of their purity of race. There is, however, one exception,

and it is found in certain animals in which the grease, white, hard, tallowy, and secreted in great quantity, causes the wool to stick together, agglomerates and occasionally entangles it.

In this case, what a superficial examination might have regarded as a quality constitutes a defect; it is not thickness, it is harshness, and the fleece is bad.

A fleece of equal thickness, and properly formed on all parts of the body, ought to be sought after, as also should uniformity of wool and of grease. Now among a considerable number of the animals so far examined, I have remarked only too often the absence of these qualities; many of the fleeces are hollow—that is to say that, on seizing a handful, there is the feeling that the hand contains much less wool than was at first imagined.

When these fleeces are cut and spread they are no longer compact—they break, and the wool is thin and weak. The changes in the nature of the grease in the same fleece are frequent; some times it is white and tallowy, bearing some analogy to that of certain "Dishley's," whilst in other places it is darker. Some fleeces have a tendency to transparency on the back, which is a defective propensity, and can only be met in one way—that is, by excluding from reproduction such animals as show this fault.

We were enabled to ascertain the live weight of twelve of the Australian rams, "prized" or "recommended." The two heaviest weighed 1 cwt. 3 qrs. 15 lbs. and 1 cwt. 3 qrs. 6 lbs; the two lightest only attained a weight of 1 cwt. 0 qrs. 19 lbs. and 1 cwt. 0 qrs. 10 lbs., giving an average for the twelve rams of 1 cwt. 1 qr. 13 lbs. per head. It must not hastily be inferred that this is the average weight of the rams of New South Wales, being merely taken on a very limited number of animals, all of which had attained "prizes" or "honourable mentions." We saw a large number amongst those taking no prizes of any kind and others sent for sale, the maximum weight of which was very far from reaching the highest figures given above; others again were far below the weight of the lightest animals taken into our computation.

Be that as it may, the weight (1 cwt. 1 qr. 13 lbs.) before cited is slightly less than the average of the Merino rams of the "Bergerie Nationale de Rambouillet" at the age of thirteen months.

It may be asked what advantage New South Wales breeders find in raising small wool-producing animals whilst they use great efforts to produce horned cattle of large proportions?

For a long time Physiology has recognised the fact that the smaller the animal the more active its breathing, and consequently, the greater its absorption of the substances of

which the elements are found in its food.† It is also known that cutaneous waste is proportioned to the extent of the skin. The knowledge of these physiological phenomena has been in Europe (in France and England more particularly) the start-point of Zootechnical improvements, which have led to the production of beasts of burden of great weight.

In a more speculative line of ideas, though no less important, rural economy proves the advantages of keeping large animals. Why then, in the face of this generally accepted fact, do New South Wales breeders persist in rearing small animals? Is it on account of an idea which is considerably spread abroad, "that more vivacity and energy are to be found in the smaller, than in the larger races," and that consequently two small sheep can live on a space insufficient for the maintenance of a larger wool-producing beast; therefore that the nourishment of the animals should be improved before endeavouring to increase their size? These are healthy doctrines, which are received in France, and are taught at the "Institut National Agronomique," to which I have the honour to belong. But I fail to see in virtue of what law of nature, animals (the issue of naturally strong races, and owing the reduction of their size only to a degeneracy due to careless acclimatisation) should be endowed with a stronger, more vivacious and more enduring constitution than the races from which they are descended. This reduction in size of certain animals has not shown itself equally on all parts of the body; among many the head is heavy, and terminates in lips so thick that they cannot nip short grass with the same facility as would animals of better breed possessed of lighter heads and finer mouths.

The end at which the breeders of sheep appear to aim is the utilizing their runs as much as possible, principally with a view to the production of wool; they appear to prefer a great number of wool-bearing animals to the merits of each beast, and the quantity to the quality of the results. A desire to over simplify matters too often involves negligence; hence the animals return almost to a state of nature, by which they lose in a comparatively short time all the benefit they have derived by the improvements already made upon their forefathers.

The financial results achieved by those who undertake the breeding of sheep are certainly good, but they might be made incomparably better by the exercise of a little more exertion.

The preceding remarks respecting rams are equally applicable to the sheep comprised in class 647, and in the sub-classes "Merino Fine Combing Wool (106, 107, 108); Merino Heavy Combing Wool (112, 113, 114).

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†In comparison, be it understood, to its weight.

Many of the exhibits had left the show when the weights were taken, and we were only able to place eight of those which had taken prizes upon the weighing machine, the two heaviest showed 1 cwt. 0 qrs. 24 lbs. and 1 cwt. 0 qrs. 18 lbs.; the lightest only 3 qrs. 1 lbs. and 3 qrs. 8 lbs., a total of 7 cwt. 2 qrs. 7 lbs., or an average per head of 3 qrs. 16 lbs.; a weight less by 6 lbs. 10 oz. than that of young merino lambs at the Bergerie Nationale de Rambouillet at the age of eleven months.

We will now confine ourselves to giving the weight of some of the merino's of the Bergerie Nationale de Rambouillet.

The ram (No. 49 in catalogue) marked R, No. 1610, aged 1 year and 10 months, "Special Prize," weighed 1 cwt. 2 qrs. 6 lbs.; the ram (No. 139 in catalogue) marked R, No. 1418, aged 2 years 8 months, weighed 1 cwt. 3 qrs. 20 lbs.; a sheep (No. 175) marked R, No. 1450, aged two years 8 months, 26 days, "Special Prize," weighed 1 cwt. 1 qr. 2 lbs.; a sheep (No. 85)marked R, No. 1445, aged 2 years 9 months, "Special Prize," weighed 3 qrs. 27 lbs.

It must be noted that these two sheep are the smallest of the lot sent by the Bergerie Nationale de Rambouillet.

The following is the weight of two French Merinos exhibited by Mr. Gilbert, of Wideville, near Trappes (Seine et Oise).

The ram (No. 52 in Catalogue) aged 1 year 9 months, Special Prize, weighed 1 cwt. 3 qrs. 9 lbs. The sheep (No. 89) aged 3 years 7 months, Special Prize, weighed 1 cwt. 2 qrs. 14 lbs.

All the animals, after being weighed for the first time at the show, were sheered on 23rd and 24th October, and were again weighed, as was also the fleece of each beast apart

In the following table will be found the requisite data for comparing the above-mentioned animals with those of Australia.

The longwool-bearing animals, which were too few in proportion to their merit, afforded some fine specimens of the Leicester and Lincoln breeds.

Then followed Angora Goats, two of which were more particulary (the male and female both taking first prizes) remarkable for their whiteness, fineness and brillancy of their wool.

To complete the show, there were twelve female and two male alpacas. These animals, which we are not accustomed to see at our European shows, will certainly be used with advantage in Australia.

	No. of Official Catalogue.	No. of the N.S. Stud Farm.	Information of each Animal, and where from.	Weight before Shearing.			Weight after Shearing.			Weight of Fleece.	Percentage of weight of Fleece to weight of Animal shorn
				cwt.	qrs.	lbs.	cwt.	qrs.	lbs.	lbs.	Per cent.
Ram	30	1350	Born at the National Sheep Stud Farm of Rambouillet, 12th Nov., 1875	1	3	19	1	3	0	19	9.69
,,	49	1610	Born at the N.S.S. Farm of Rambouillet, 28th Oct., 1877. Special Prize at the Sydney International Exhibition, 1879	1	2	13	1	1	22	19	13.28
,,	139	1418	Born at the N.S.S Farm of Rambouillet, 24th Nov., 1876	1	3	12½	1	2	21½	19	10.02
Ewe	85	1445	Born at the N.S.S. Farm of Rambouillet, 12th Nov., 1875. Special Prize at the Sydney International Exhibition, 1879	1	0	1	0	3	15½	13½	13.56
,,	86	1454	Born at the N.S.S Farm of Rambouillet, 18th Nov., 1876	1	0	26½	1	0	10	16½	13.52
,,	87	1401	Born at the N.S.S. Farm of Rambouillet, 3rd June, 1876	1	0	13	0	3	27	14	12.61
,,	88	1496	Born at the N.S.S. Farm of Rambouillet, 1st Dec., 1876	1	0	12	0	3	26½	14½	13.24
,,	175	1450	Born at the N.S.S. Farm of Rambouillet, 14th Nov., 1876	1	0	23	1	0	8½	14½	12.03
,,	176	1455	Born at the N.S.S. Farm of Rambouillet, 2nd Nov., 1876	1	0	14½	1	0	2½	12	10.47
,,	177	1492	Born at the N.S.S. Farm of Rambouillet, 29th Nov., 1876... ...	1	0	3	0	3	17	14	13.86
,,	178	1488	Born at the N.S.S. Farm of Rambouillet, 27th Nov., 1876... ...	1	0	5½	0	3	20½	13	12.43
,,	179	1427	Born at the N.S.S. Farm of Rambouillet, 20th Nov., 1876. Special Prize at the Sydney International Exhibition, 1879	1	0	20½	1	0	7½	13	12.45
Ram	51	16	Born at M. Gilbert's, at Wideville, near Trappes (S. *et* O.), France	1	1	27½	1	1	13	14½	9.47
,,	52	6	Born at Wideville. Special Prize at the Sydney International Exhibition, 1879	1	2	22½	1	2	1½	21	12.38
Ewe	89	472	Born at Wideville. Special Prize at the Sydney International Exhibition, 1879	1	2	5½	1	1	19½	14	8.77
,,	90	806	Born at Wideville	1	1	13½	1	0	26	15½	11.23
,,	91	274	Born at Wideville	1	2	5½	1	1	19	14½	9.11
,,	92	743	Born at Wideville	1	1	20	1	1	4½	15½	10.72

Such, Sir, are the thoughts which have been suggested to me by an attentive examination of the Sheep Show; and I shall esteem myself only too fortunate if they prove of some service both to France and to Australia.

I have, &c.,

F. De SAVIGNON,

Professor of Agriculture at the National Agricultural Institute of France,

Commissioner for the French Government,

Delegate for the Ministry of Agriculture and Commerce to the Sydney International Exhibition,

Representative of the National Sheep Stud Farm of Rambouillet.

TURNER & HENDERSON, Hunter Street, Sydney.

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